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AUTHOR	Landini, Albert J.; Gold, Ben K.
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ABSTRACT

A guideline to a two-stage outcome evaluation for individual courses within a total Learning Resources Center project is presented. Program and process variables are taken into consideration with emphasis on evaluating change in student behavior. The use of behavioral objectives is cited as the best means of determining the difference between treatment groups, and a scheme for using them is advanced. Two flowcharts are provided to serve as guides in conducting the evaluation. (Author/DB)

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LOS ANGELES CITY COLLEGE

PROPOSED EVALUATION DESIGN FOR LOS ANGELES CITY COLLEGE'S AUTO-TUTORIAL PROGRAMS AND LEARNING RESOURCES CENTER

Research Study #72-17

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Albert J. Landini
Ben K. Gold
Office of Research
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PROPOSED EVALUATION DESIGN FOR LOS ANGELES CITY COLLEGE'S
AUTO-TUTORIAL PROGRAMS AND LEARNING RESOURCES CENTER

I. INTRODUCTION.

This report is the second in a series of reports being produced by the Los Angeles City College (LACC) Research Office dealing with the evaluation of that school's Auto-Tutorial (A-T) programs and Learning Resources Center (LRC). Action surrounding these programs has largely been the responsibility of the Media-Oriented Systems Technology (MOST) Task Force convened to develop and implement media oriented instructional programs.

The problem. As the development of A-T programs for the LRC has progressed the MOST group began to evidence greater concern for the evaluation of their efforts. The first step in the ensuing evaluation was conduction of a needs assessment to determine the broad goals of the overall program.* Within the time constraints imposed on the project it was thought that the second formal step in the evaluation project should be a documentation of the anticipated summative or outcome evaluation design.

Statement of purpose. In this paper the evaluation concerns for the A-T, LRC project are stated and described. In addition, proposed evaluation designs are presented for both the individual A-T programs as well as the overall LRC project. It is anticipated that these will serve as guidelines for those persons actually conducting the final outcome evaluation for the MOST group. The designs presented here should not be considered final statements as it is likely that program implementation evaluation and program progress evaluation will cause the final evaluation design to be modified.

*Landini, Albert J. and Ben K. Gold, An Ex Post Facto Needs Assessment Using a Modified Delphi Technique to Determine the Goals of a Community College Learning Resources Center, Los Angeles City College, Research Study #72-6, May, 1972.

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II. PROGRAM GOALS

Goals developed for the overall LRC project were cast within the framework that the overriding principle concerning the LRC, as understood by the research staff and approved by the MOST group, was that the initial decision to construct an LRC at LACC was to be able to respond to increasing student enrollments in the face of diminishing revenues without lowering the quality of education offered.

Global goal areas. In the needs assessment phase of this evaluation project several global goal areas were identified. These were the areas in which it was anticipated that the LRC would have a positive effect on student's skills, attitudes and knowledge. They were identified as:

* Small student discussion groups
* Better learning environment
* Better instruction
* Individualized instruction (machinery)
* Individualized instruction (instructor)
* Better organizational structure

From these, final goal statements representing the global goal areas were constructed.

Final goal statements. The final goal statements represented complete statements of the global goal areas and were stated thusly. Los Angeles City College courses using the new Learning Resources Center and Auto-Tutorial services will:

* Benefit from the establishment of increased student-teacher interaction through the formation of small student discussion groups, occuring at no additional cost to the instructional program
* Experience an increase in professional quality and humanization of instruction for their individual students
* Witness a general improvement of instructional quality through improved course content, periodic subject matter review, and heightened creativity in communicating subject matter material to students

Final goal statements (continued)

* Have instructors who routinely update approaches and use new teaching techniques in better organized courses
* Allow students to move through and review course material at their own pace regardless of their individual ability level, knowing if they have completed a section successfully or need to repeat it
* Realize increased student gain, by having improved learning situations that make education more interesting and stimulating

It was this set of statements that constituted the final product of the needs assessment.

Positive objectives. In moving from the needs assessment to the outcome evaluation design, it was found necessary to expand each one the final goal statements to a series of Positive Objectives. Each of these objectives provided a basis for precise measurement of the attainment of each goal expressed earlier. They are listed here for the readers convenience.

* Classes using the LRC approach will have measurably more student-teacher interaction than classes utilizing the traditional lecture approach
* Small discussion groups of 15 to 30 students will be formed as sub-units of classes using the LRC approach
* The formation of small student discussion groups will result in no additional costs to the LRC instructional program when compared to parallel traditional classes.
* Students involved in the LRC approach classes will have better self images of themselves as students and more favorable attitudes toward school than students in parallel traditional classes
* Instructors assigned to LRC classes will manifest more positive attitudes and enthusiasm toward their profession than instructors not assigned to such programs
* Instructors assigned to LRC classes will have a greater desire to aid their students in the learning process than instructors not assigned to such programs
* LRC instructional programs will have more current material incorporated into them than traditional programs
* LRC instructional program materials will be periodically reviewed and updated
* LRC instructional programs will reflect heightened instructor creativity in communicating subject material to students

Positive objectives (continued)

* Instructors teaching LRC classes will use innovative teaching techniques to a greater degree than instructors not involved with such programs
* Systematic management principles will be employed in LRC classes to routinely update teaching approaches
* Students in LRC classes will be exposed to new class material at a pace of their own choosing
* Students in LRC classes will have immediate feedback as to their success in learning the material presented

Operational statements. The positive objectives were further broken down to a concrete set of measurable Operational Statements. It is anticipated that this list of statements will be the basis for the construction of a number of test items to be used in the overall assessment of the LRC program's effectiveness.

* Classes using the LRC approach will have measurably more student-teacher interaction than classes utilizing the traditional lecture approach
    1. There will be a difference between the LRC and traditional classes in the amount of personal interaction reported in terms of student-teacher contact in the classroom and outside the classroom by both teachers and students
    2. Students in the LRC classes will report greater personal involvement with their instructors than students in traditional classes
    3. Teachers in LRC classes will report greater personal involvement with their students than teachers in traditional classes
    4. Teachers in LRC classes will report more hours of student contact on an individual basis than instructors in traditional classes
* Small discussion groups of 15 to 30 students will be formed as sub-units of classes using the LRC approach
    1. LRC classes will have discussion groups smaller than the instructional groups associated with traditional lecture classes of parallel subject matter
    2. LRC classes will have discussion groups no larger than 30 students

Operational statements (continued)

* The formation of small student discussion groups will result in no additional costs to the LRC instructional program when compared to parallel traditional classes

  1. When computed, cost per student will be the same or less for LRC classes as traditional classes
  2. Additional budget allowances will not be made beyond developmental costs for LRC classes on a per student cost basis

* Students involved in the LRC classes will have better self images of themselves as students

  1. Using self inventory reporting instruments, students in LRC classes will report stronger self images than those in traditional courses
  2. Students in LRC courses will have higher overall GPA's for the semester they are involved in than students in parallel but non-LRC courses

* Instructors assigned to LRC classes will manifest more positive attitudes and enthusiasm toward their profession than instructors not assigned to such programs

  1. Instructors assigned to LRC classes will report reading more material in their field more often, attending more professional meetings, spending more time in developing classroom materials than instructors in traditional classes
  2. Students in LRC classes will report that their instructors are more enthisiastic in the presentation of materials, interested in student well being and cooperative in their manner and behavior than instructors in traditional classes

* Instuctors assigned to LRC classes will have a greater desire to aid their students in the learning process than instructors not assigned to such programs

  1. Students will report greater rapport with instructors teaching LRC courses
  2. Students will report instructors teaching LRC courses are easier to reach for appointments outside class
  3. Instructors teaching LRC courses will report greater tutorial contacts than teachers not so involved

Operational statements (continued)

* LRC instructional programs will have more current material incorporated into them than traditional programs

  1. Department Chairmen will report that LRC courses have the most current subject matter appropriate incorporated into them
  2. The Dean of Instruction will report that LRC courses have the most current subject matter appropriate incorporated into them
  3. Course evaluation by peer instructor groups will report that LRC courses have the most current subject matter appropriate incorporated into them

* LRC instructional program materials will be periodically reviewed and updated

  1. LRC instructors will produce documentation indicating yearly updating of the audio-tutorial segment of their course
  2. The LRC will produce documentation indicating that the updating capability of its equipment has been utilized to update each instructional package yearly

* LRC instructional programs will reflect heightned instructor creativity in communicating subject matter to students

  1. Students will report greater ease in learning LRC course subject matter than students in parallel traditional courses
  2. Students will evidence greater retentive ability of subject matter when tested over time

* Instructors teaching LRC classes will use innovative teaching techniques to a greater degree than instructors not involved with such programs

  1. Using a rating team methodology, LRC teachers will be shown to use more innovative teaching techniques than traditional teachers
  2. Students in LRC courses will admit to greater exposure of innovative teaching techniques in LRC courses than in traditional ones
  3. LRC instructors will state that they are using more innovative teaching techniques than instructors teaching traditional courses

*Systematic management principles will be employed in LRC classes to routinely update teaching approaches

Operational statements (continued)

1. LRC instructors will produce a proposal for systematically and routinely updating their teaching approaches
2. Procedures proposed by instructors for updating materials in LRC classes will be validated as to their state-of-the-art procedure through a review process supervised by the Dean of Instruction

* Students in LRC classes will be exposed to new class material at a pace of their own choosing

1. LRC classes will have higher GPA's than classes not allowing the self pacing of students
2. Students will report using the self pacing option of the LRC equipment

* Students in LRC classes will have immediate feedback as to their success in learning the material presented

1. Interim examinations will indicate acceptable student mastery of the subject matter (80/80).
2. Examinations will follow each unit of media presentation

* Students in the LRC approach courses will realize greater learning gains than students enrolled in parallel but traditional classes

1. Using appropriate standardized examinations (if available) students in the LRC courses will indicate greater learning gains than students enrolled in parallel but traditional classes

III. EVALUATION CONCERNS

In evaluation two concerns are evident; (1) formative evaluation, or the producing of information for the product developer to inform him if his efforts are reaching the mark he set for himself. It's purpose is to aid the product developer in making correct changes before his program has been put in the final stages; (2) summative or outcome evaluation, whose purpose is to provide the decision maker with information to answer such questions as, "Should we continue the program next year?", and "Should we extend the program into other subject matter areas."

Evaluation concerns (continued)

Program vs process variables. This report is primarily concerned with presenting a design for the final outcome evaluation. In reviewing the Positive Objectives and Operational Statements advanced earlier it is readily noted that the major concerns of the MOST Task Force were with process variables rather than program variables. This concern is traditional in education evaluation but is not always a correct one.

In process evaluation, the concerned educators and decision makers are seeking information regarding the institution's ability to offer and maintain the program. This differs from program evaluation in which the question being asked is simply the "new" program better, worse, or equal to the "old" program, in its ability to increase student learning.

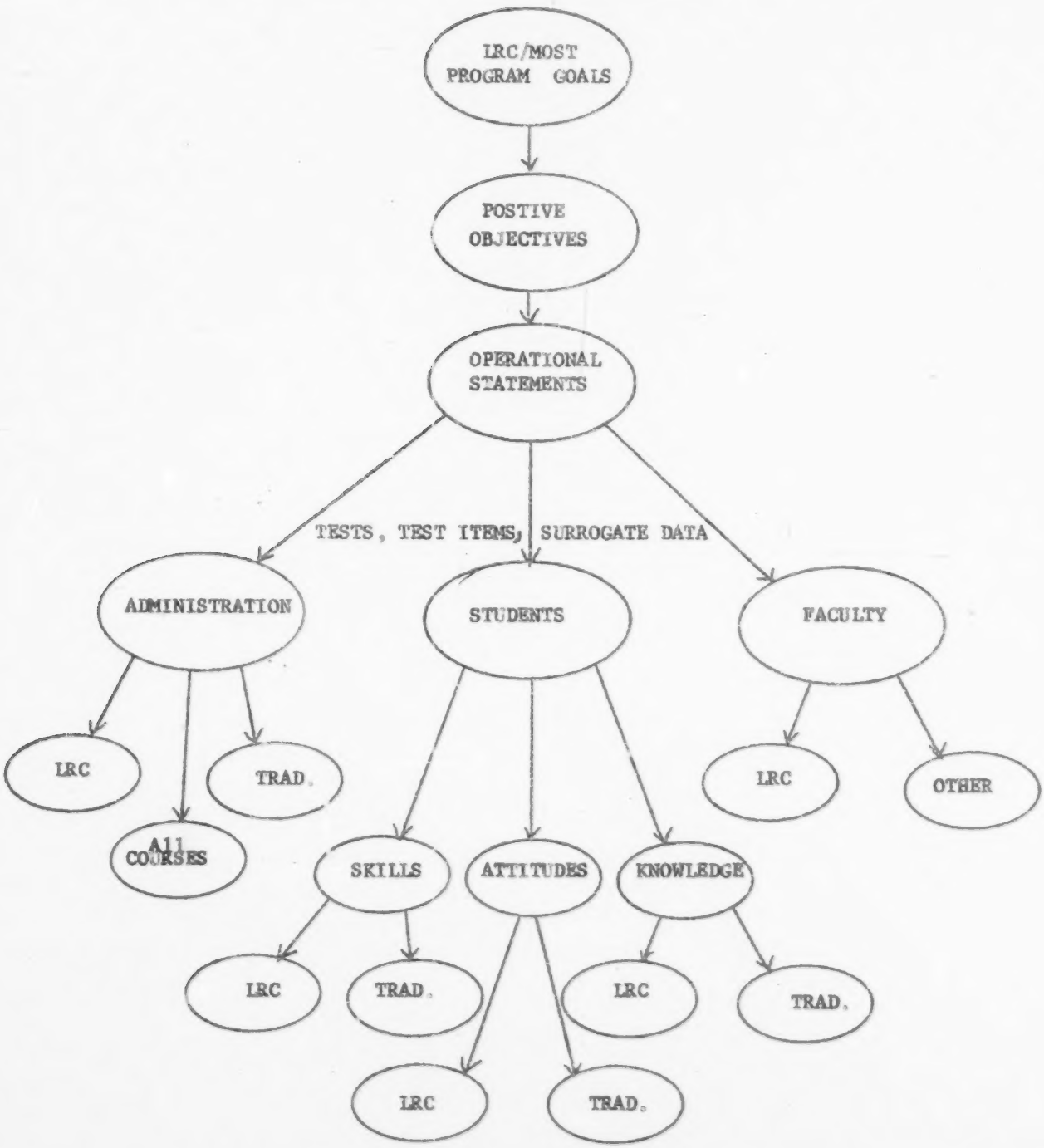
However, two of the Positive Objectives do lend themselves to program evaluation considerations. They are:

* Students involved in the LRC approach classes will have better self images of themselves as students and more favorable attitudes toward school than students in parallel traditional classes. (affective domain)
* Students in the LRC approach courses will realize greater learning gains than students enrolled in parallel but traditional classes. (cognitive domain)

Thus, the evaluation design offered here will be dealing with both program and process variables, but will have a major emphasis on program considerations.

Overall evaluation design. In this proposed evaluation two levels are evident. One is concerned with evaluating the individual courses and the other looks at the effectiveness of the program school-wide. In each level of the evaluation, both program and process variables are considered. No instruments, measurement techniques, or statistical methods are advanced as absolutes at this time, feeling that these will be determined by the evaluator actually conducting the final outcome evaluation.

OUTCOME EVALUATION DESIGN FOR
LRC/MOST PROGRAM



IV. EVALUATION DESIGN

Two schematics are presented as detailed explanations of the outcome evaluation process, one is for use with individual courses and the other for evaluating overall program impact.

Individual program evaluation. The individual instructional program evaluation is perhaps the most critical from the educationist point of view as it will serve to determine if the "new" programs were more or less efficient as instructional programs than the traditional ones.

This evaluation phase will seek to answer such specific questions as:

(1) Were the LRC classes better, and did they cost more or less?
(2) Were the LRC classes the same and did they cost more or less?
(3) Were the LRC classes worse and did they cost more or less?

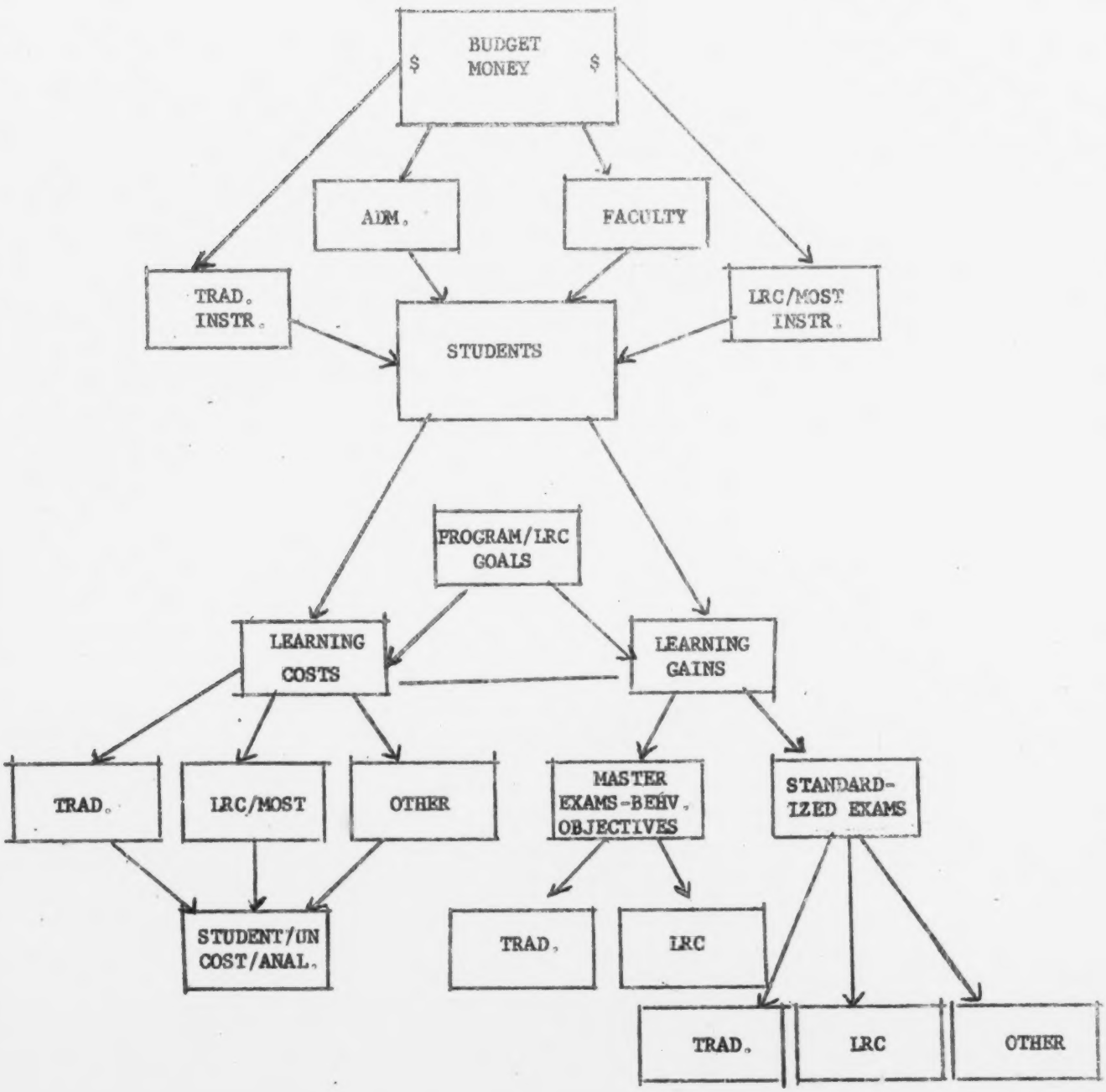
To do this two major areas are considered. The first is that of Learning Costs, and the other Learning Gains of investigations in these areas will make use of student/unit cost analysis, mastery exams, standardized exams, and will reveal answers to the following questions:

(1) How much did each program cost?
(2) Which program was most effective?
(3) What was outcome relationship between LACC and nation?

It could seem that much of this evaluation will be concerning itself with process variables based on costs and program variables based on standardized exams (if available). This is not so and it should be stated that emphasis on reviewing the evaluation results should be placed on mastery of learning criteria.

To do this, it is suggested that instructors for both the LRC and the traditional parallel courses construct behavioral objectives. These objectives should be flagged and placed in a common pool from which test

OUTCOME EVALUATION DESIGN FOR
LRC/MOST COURSES



Individual program evaluation (continued)

items will be built. Exams should have a mixture of both LRC and traditional items and be administered in parallel form to both kinds of classes.

Thus, results from these tests will indicate how well students did on material associated with their class as well as the counter form. This will provide not only a measure of how well each course did in meeting its overall objectives, but also it will give a means of forming a legitimate inter-class comparison.

Overall program evaluation. This phase of the evaluation is more concerned with process variables and will seek to measure the goal attainment expressed by faculty and administration in its earlier "needs assessment." Investigative procedures as shown in the schematic, revolve about administration, students, and faculty. Again questions will be ordered to discover cost-effective relationships, student attainment as to skills, attitudes and knowledge, as well as faculty satisfaction with the program.

Investigative techniques will hinge on the analysis of cost data and budget files for LRC, traditional and other courses, test and attitudinal measure outcomes for students resulting from the individual course evaluations, and measured faculty attitudinal changes along with general monitoring of various process variables.

V. SUMMARY AND CONCLUSIONS

SUMMARY. What has been presented here is a guideline to a two-stage outcome evaluation for individual courses within a total Learning Resources Center project. Program and process variables are both taken into consideration with emphasis on evaluating change in student behavior. The use of Behavioral objectives has been cited as the best possible means of determing the difference between treatment groups, and a scheme for so using them has been advanced. Two flowcharts are provided to serve as guides in conducting the evaluation for these staff members who may follow this report.

Summary and conclusions (continued)

CONCLUSIONS. The most important consideration here is a philosophy of evaluation, rather than a receipe of how to do one. Sufficient room exists for the actual evaluator to express his individuality in test and measurement design and construction, and hence manifest his own personality in the final effort.

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